

## THE WATER CONSUMPTION

## MR. BOLLING AGAIN ADVOCATES INTRODUCTION OF METERS.

Repairs to the Water Works During the Past Year—Capacity of the Pumping Apparatus—Waste of Water.

Mr. Charles E. Bolling, Superintendent of the Water Works, in his report to the Mayor and City Council in regard to the work done by his department during the year 1893 gives a detailed statement as to the condition of the plant, the work done, the expenses incurred, etc. He distinctly shows that during the past nine years, since he has been in charge of the water works, a distinct and steady progress has been made. He takes the ground that for the money invested since the establishment of the works in 1830 the city has received full returns, either in the annual revenues derived from it or in the value of the property which has been required.

Mr. Bolling lays great stress upon the advantage which would be derived from a general introduction of water-meters and the saving that would result therefrom. He admits that a majority of the members of the City Council are not disposed to carry out this suggestion, and he makes, therefore, propositions as to the best thing to be done.

The following is an extract from his report in addition to what has been published in yesterday's Times:

The race-ways of the water works are in fair condition, with the exception of a short section of the canal bank just west of the five-mile lock. The repairs along this section have been constant, and cost during the year \$3,384.66. The bank at this point would be made perfectly secure and safe by an outlay of \$3,500, and I trust the amount will be appropriated this year to make the bank secure and relieve us of this heavy annual tax. Repairs are also needed to the guard band at Bethesda, Dam, on the south side of the river, and the wing walls to the dam on the north side. I regard these repairs as necessary for the preservation of the dam. A large portion of the canal channel was dredged, at a cost of \$1,211.10 to the city. The same amount was paid by the Chesapeake and Ohio Railway Company for this improvement. The head walls and gates are all in good order.

## REPAIRS TO THE MACHINERY.

The damage to the machinery in the two pump-houses during last winter from the ice was not great, but entailed some repairs. The most important improvement made was the introduction of a new style of valve in the new pumps. The old brass conical valves were worn out and had to be replaced. The cost of these valves was \$2,700. I had put in a new cast-iron valve and seat, rubber faced, in all the pumps, at a cost of \$1,500, one great improvement being the cheapness in repairs to this valve. The principal part of the rubber face, which can be replaced at a cost of \$10, whereas the renewing of the old valves cost \$100 to each case. The efficiency of the pumps was greatly increased by this change, saving a speed in revolution of about 20 per cent. New plungers and plunger-rings were put in the steam pump, which were much needed. The pumping machinery at both the old and new houses, the buildings and grounds, are all in very good condition and present a better appearance than ever before.

## SAVINGS FROM WATER METERS.

During the past year 350 water meters were in use in this city, an increase of 100 over the number of the previous year. All the meters set during last year have been purchased at the request and cost of the water taker, and the results demonstrate clearly that the water taker should make the purchase and pay for the same. The water meter has saved water and expense. It is impossible to fix a rate for water equitable to all cases, and the only fair way to charge for water is by measurement. Among the 23 premises examined during the year which had no meters, are private residences, manufactories, and buildings embracing almost every different kind of charge, as fixed by ordinance. The water bills of citizens belonging to the working class, who introduced meters in their houses during the past year, show a saving to them of fifty per cent, and upon inquiry I have learned from them individually that they have in no way stinted themselves, but have used water abundantly in their daily use and for every conceivable purpose. The total saving in the 23 cases examined shows an average of 50 per cent. There are only five cases in the whole list showing a higher bill by meter than by ordinance rate, and these are caused by leaks or negligence in leaving the fixtures running. There have been only a few complaints, and invariably have we been able to satisfy the consumer as to the cause. I am safe in saying ninety-eight per cent, of those having meters advocate their general use. One leaky fixture for one month's bill arouses the consumer, and from that time, by his vigilance, he is rewarded with a small bill.

## THE WASTE OF WATER.

The average daily consumption of water during the past year was nearly the same as during the previous year, 12,321,254 gallons, and placing the population of this city at 160,000, it shows an equal to 150 gallons per capita. A comparison with Atlanta, Ga., a city of about the same size as Richmond, but with a meter to every tap, shows that in the former they pumped during the past year less than 3,000,000 gallons. In 1885 previous to the putting in of meters, the daily pumpage at Atlanta, with 1500 taps, was nearly 6,000,000 gallons, double what it was in 1882, with 4,500 taps. The reports from Atlanta show that all residents in that city are abundantly supplied with an average of 21 gallons per day and per capita, while we are suffering in this city for want of pressure, and with a consumption of 150 gallons per head. I do not know how to make the illustration more forcible than as stated. We are wasting over 3,000,000 gallons of water each day, of no use or benefit to any one, but subjecting our citizens to the cost of furnishing it. I am fully aware that meters are not the panacea for every thing, but they would meet our requirements for some time to come.

Whenever the Lee district, which has recently been taken into the corporate limits, begins to build up we will have to provide other means for giving this section water, most probably by the erection of a water tower near the new reservoir, because the surface of the water in the new reservoir is only a few feet higher than the general elevation of the land in this district.

## HOW TO REMEDY THE EVIL.

My experience has taught me that house to house inspection amounts to nothing in reducing the waste. The only good accomplished in that manner is the discovering of leaky fixtures and the requiring of their being repaired, but it has no effect in stopping the fixtures which are left running, and this is where our great loss occurs. Under ordinary domestic pressure one-quarter of an inch opening will discharge 15,432 gallons in twenty-four hours. Some idea of where the great waste occurs is revealed, when we daily see how many fixtures are left running constantly. Each year I become more and more convinced that the recommendation I made in 1886, and each year since, to place meters on all supplies, is the best and cheapest means of giving relief and that this is the only equitable way to charge for water.

The water has been good during the past year, and as a general thing clearer than usual. I can say no reason to question the healthfulness and purity of our drinking water. Its color at certain times is the only objection, and I feel sure that complaint would be removed by building the large storage basin recommended in former reports. In the event

of constructing this basin the water would be taken directly from the river at a point just above the five-mile lock.

## FINANCE AND COMMERCE

## THE CLOSING QUOTATIONS OF STOCKS AND BONDS.

## Offerings and Sales at the Richmond To-Stock Exchange—Internal Revenue Collections—Foreign Advice.

**NEW YORK, April 7.**—The opening dealings on the Stock Exchange were quiet. The market was generally heavy, yielding 1/4% per cent, under comparatively light sales. The receipt of lower prices from London was mainly responsible for the decline. After the short interest had been increased the bulls took hold of the market with something like old-time vigor, and the completion of speculation underwent a complete change. An advance of 1/4% per cent, was recovered, and in many instances the highest figures of the week were reached. The commission houses had liberal orders both from local and out-of-town operators. The leaders in the rise were the war and Hudson, General Electric, Lead, Chicago Gas, Sugar, Missouri Pacific, and the Grangers. Subsequently Chicago Gas fell off to 2 3/4%, Delaware and Hudson 1 1/4% to 1 1/2% and the remainder of the list 1/4% to 1/2% per cent. The reaction was due to sales to realize profits by the traders who bought at low prices early in the week and were unwilling to carry their contracts over Sunday. The undertone of speculation, however, was firm, and the feeling in the market for stocks confident. The active inquiry for bonds is a conspicuous feature of the dealings at the exchange, and has a strengthening influence on the market for stocks. Speculation left off firm. Railway and miscellaneous bonds were active and strong.

The sales of listed stocks to-day aggregated 119,000 shares; unlisted, 19,000. Money on call nominally 1 per cent; prime mercantile paper, 3/4% per cent. Sterling exchange firm, with actual business in bankers' bills at 48 1/4-48 1/2 for sixty days and 48 1/4-48 1/2 for demand; bar silver, 61 1/2. Government bonds steady. State bonds dull. The market for silver at the board was neglected.

## TREASURY BALANCES—COIN.

Treasury Balances—Coin, \$105,022,000; currency, \$59,481,000.

## STOCK QUOTATIONS.

Closing Bids.

American Cotton Oil, 31 1/2.

American Sugar, 72 1/2.

American Tobacco, 84 1/2.

American Tobacco preferred, 90 1/2.

Atchafalpa, 80 1/2.

Baltimore and Ohio, 80 1/2.

Canada Pacific, 69 1/2.

Chesapeake and Ohio, 100 1/2.

Chicago and North Western, 82 1/2.

Chicago Gas, 62 1/2.

Delaware, Lack and Western, 104 1/2.

Delaware and Maryland, 20 1/2.

East Tennessee, Va. and Ga. preferred, 30 1/2.

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